MH-2 Wash

User Manual

RUSH™
by Martin®

Professional Entertainment Technology

Table of contents

Safety information

The following symbols are used to identify important safety information on the product and in this manual:

Warning!
Safety hazard. Risk of severe injury or death.

Warning!
LED light emission. Risk of eye injury.

Warning!
Refer to manual before installing, powering or servicing.

Warning!
Hazardous voltage. Risk of lethal or severe electric shock.

Warning!
Hot surfaces and fire hazard.

Avoid looking directly into the LED light source beam and do not view the light output with optical instruments or any device that may concentrate the beam.

This product is for professional use only. It is not for household use. It presents risks of severe injury or death due to fire hazards, electric shock and falls.

Read this manual before installing, powering or servicing the fixture, follow the safety precautions listed below and observe all warnings in this manual and printed on the fixture. Keep this manual for future use. If you have questions about how to operate the fixture safely, please contact your RUSH by Martin™ dealer or call the Martin™ 24-hour service hotline on +45 8740 0000, or in the USA on 1-888-tech-180.

Please see the Martin website at www.martin.com for the latest information and documentation about this and all Martin products.

Protection from electric shock

Always shut down power to the fixture before carrying out any installation or maintenance work.

Disconnect the fixture from AC power before removing or installing any cover or part and when not in use.

Ground (earth) the fixture electrically.

Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.

Replace defective fuses with ones of the specified type and rating only.

The voltage and frequency at the power throughput outlet are the same as the voltage and frequency applied to the power inlet. Only connect devices to the power outlet that accept this voltage and frequency.

Interconnect devices to power in a chain only as described in this manual.

Before using the fixture, check that all power distribution equipment and cables are in perfect condition and rated for the current requirements of all connected devices.

Isolate the fixture from power immediately if the power plug or any seal, cover, cable, or other component is damaged, defective, deformed, wet or showing signs of overheating. Do not reapply power until repairs have been completed

Do not expose the fixture to rain or moisture.

Protection from burns and fire

Do not operate the fixture if the ambient temperature (T_a) exceeds 40° C (104° F).

The surface of the product casing can reach up to 85° C (185° F) during operation. Avoid contact by persons and materials. Allow the fixture to cool for at least 10 minutes before handling.

Keep flammable materials well away from the fixture. Keep all combustible materials (e.g. fabric, wood, paper) at least 100 mm (4 in.) away from the fixture head.

Ensure that there is free and unobstructed airflow around the fixture. Provide a minimum clearance of 100 mm (4 in.) around fans and air vents.

Do not illuminate surfaces within 200 mm (7.9 ins.) of the fixture.

Do not attempt to bypass thermostatic switches or fuses.

Connect only other fixtures of the same type to the power throughput sockets. Do not connect any other type of device to these sockets.

Do not stick filters, masks or other materials onto any optical component.

Protection from injury

Do not look continuously at LEDs from a distance of less than 8.3 meters (27 ft. 3 inches) from the front surface of the fixture without protective eyewear such as shade 4-5 welding goggles. At less than this distance, the LED emission can cause eye injury or irritation. At distances of 8.3 meters (27 ft. 3 inches) and above, light output is harmless to the naked eye provided that the eye's natural aversion response is not overcome.

Do not look at LEDs with magnifiers, telescopes, binoculars or similar optical instruments that may concentrate the light output.

Ensure that persons are not looking at the LEDs from within 8.3 meters (27 ft. 3 inches) when the product lights up suddenly. This can happen when power is applied, when the product receives a DMX signal, or when certain control menu items are selected.

To minimize the risk of eye irritation or injury, disconnect the fixture from power at all times when the fixture is not in use, and provide well-lit conditions to reduce the pupil diameter of anyone working on or near the fixture.

Fasten the fixture securely to a fixed surface or structure when in use. The fixture is not portable when installed.

Ensure that any supporting structure and/or hardware used can hold at least 10 times the weight of all the devices they support.

If suspending from a rigging structure, fasten the fixture to a rigging clamp. Do not use safety cables as the primary means of support.

If the fixture is installed in a location where it may cause injury or damage if it falls, install a secondary attachment such as a safety cable that is approved by an official body such as TÜV as a safety attachment for the weight that it secures. The safety cable must comply with EN 60598-2-17 Section 17.6.6 and be capable of bearing a static suspended load that is ten times the weight of the fixture and all installed accessories.

Allow enough clearance around the head to ensure that it cannot collide with an object or another fixture when it moves.

Check that all external covers and rigging hardware are securely fastened.

Block access below the work area and work from a stable platform whenever installing, servicing or moving the fixture.

Do not operate the fixture with missing or damaged covers, shields or any optical component.

Do not lift or carry the fixture by its head. Always ensure that the fixture is supported by its base.

In the event of an operating problem, stop using the fixture immediately and disconnect it from power. Never attempt to use a fixture that is obviously damaged.

Do not modify the fixture or install other than genuine RUSH by Martin™ parts.

Refer any service operation not described in this manual to a qualified technician.

Introduction

The MH-2 Wash is an extremely small, fast and powerful LED moving beam and wash effect incorporating seven 10 W long-life LEDs. It provides a 10° beam angle, smooth electronic dimming, as well as strobe effects. The device is extremely rugged, lightweight and compact, and is ideal for mobile DJ's, touring or small fixed installations.

The fixture can be controlled using any DMX-compliant controller, or operate as a standalone device, running one of four pre-programmed shows, with the option of 'music trig' sound activation.

The fixture is supplied with this user manual and a 1.5 m (5 ft) power cable (local power plug not included).

Before using the product for the first time

1. Read Safety information on page 5 before installing, powering, operating or servicing the fixture.

2. Unpack and ensure that there is no transportation damage before using the fixture. Never attempt to operate a damaged fixture.

3. If the fixture is not going to be hard-wired to a mains supply, attach a local power plug (not supplied) to the end of the supplied power cable.

4. Before operating, ensure that the voltage and frequency of the power supply match the power requirements of the fixture. (See Specifications on page 31.)

5. Check the Martin Professional website at www.martin.com for the most recent user documentation and technical information about the fixture. RUSH by Martin user manual revisions are identified by the revision letter at the bottom of the inside cover.

Note that whenever AC power is applied to the fixture, it will reset all effects and functions to their home positions. Be prepared for the fixture head to move. The reset process usually takes around 20 seconds.

Physical installation

The fixture is designed for indoor use only and must be used in a dry location with adequate ventilation. Always ensure that none of the fixture's ventilation slots are blocked and always ensure that the product is firmly affixed to avoid vibration during operation.

Fastening the fixture to a flat surface

The fixture can be fastened to a hard fixed flat surface that is oriented at any angle. Ensure that the surface can support at least 10 times the weight of all fixtures and equipment to be installed on it.

Fasten the fixture securely. Do not stand it on a surface or leave it where it can be moved or fall over. Attach a securely anchored safety cable to the fixture if it is installed in any location where it may fall and cause injury or damage if the primary attachment fails.

Mounting the fixture on a truss

The fixture can be clamped to a truss or similar rigging structure in any orientation. When clamping a fixture to a truss:

1. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.

2. Block access under the work area.

3. Rig the fixture using clamps and hardware suitable for the purpose. Working from a stable platform, hang the fixture on the truss. Tighten the rigging clamps and hardware.

4. Secure the fixture against clamp failure with a secondary attachment such as an approved safety cable that is rated for the weight of the fixture.

5. Check that the head will not collide with other fixtures or objects.

AC power

Read Safety information on page 5 before connecting the fixture to AC mains power.

For protection from electric shock, the fixture must be grounded (earthed). The power distribution circuit must be equipped with a fuse or circuit breaker and ground-fault (earth-fault) protection.

Socket outlets or external power switches used to supply the fixture with power must be located near the fixture and easily accessible so that the fixtures can easily be disconnected from power.

Do not insert or remove live Neutrik PowerCon connectors to apply or cut power, as this may cause arcing at the terminals that will damage the connectors.

Do not use an external dimming system to supply power to the fixture, as this may cause damage to the fixture that is not covered by the product warranty.

Use only Neutrik PowerCon cable connectors to connect to power sockets.

Power input and throughput cables must be rated 20 A minimum, have three conductors 1.5 mm² (16 AWG) minimum conductor size and an outer cable diameter of 5 - 15 mm (0.2 - 0.6 in.). Cables must be hard usage type (SJT or equivalent) and heat-resistant to 90° C (194° F) minimum. In the EU the cable must be HAR approved or equivalent. Cables used for power throughput must meet the same specifications as for power input cables.

The fixture can be hard-wired to a building electrical installation if you want to install it permanently, or a power plug that is suitable for the local power outlets can be installed on the power cable.

The fixture has an auto-ranging power supply that accepts AC mains power at 100V~240V, 50/60 Hz. Do not apply AC mains power to the fixture at any other voltage than this.

Power can be relayed from one fixture to another device in a daisy-chain via the white PowerCon throughput socket. Do not connect devices to power in a chain that will exceed the power and current ratings of any cable or connector

used in the chain. When using:

- 120 V, 60 Hz mains power, do not connect more than 3 fixtures to power in one chain.

- 230 V, 50 Hz mains power, do not connect more than 5 fixtures to power in one chain.

Fixture overview
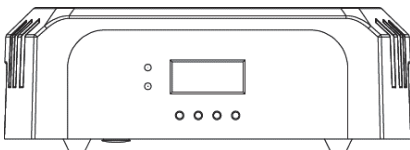
LEDs

The fixture has two LEDs on the front of the base:

DMX	On	DMX input present
SOUND	Flashing	Sound activation

Buttons

MENU	• Activate the menu mode functions, or • Return to the previous level of the menu structure, or • Hold to exit the menus
DOWN	Go down a menu branch
UP	Go up a menu branch
ENTER	Confirm the selected function

Hold and press the MENU button to exit the menu mode (this occurs automatically after 60 seconds when there has been no user input).

Connections

On the rear of the base of the fixture can be found Neutrik PowerCon mains power input (blue) and output (white) connections and well as 3-pin and 5-pin XLR connections for data input and output.

Fuse

The T 6.3A fixture fuse can be found under the cover next to the power input/output connectors.

Control data link

A DMX 512 data link is required in order to control the fixture via DMX. The fixture has 3-pin and 5-pin XLR connectors for DMX data input and output.

The number of daisy-chained fixtures is limited by the number of DMX channels required by the fixtures in relation to the maximum 512 channels available in one DMX universe. Note that if independent control of a fixture is required, it must have its own DMX channels. Fixtures that are required to behave identically can share the same DMX address and channels. To add more fixtures or groups of fixtures when the above limit is reached, add a DMX universe and another daisy-chained link.
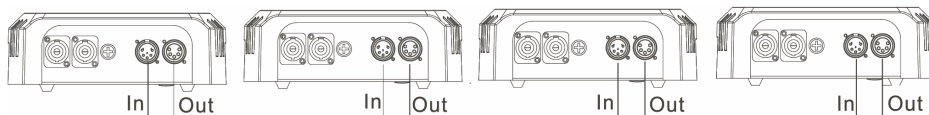
Tips for reliable data transmission

Use shielded twisted-pair cable designed for RS-485 devices: standard microphone cable cannot transmit control data reliably over long runs. 24 AWG cable is suitable for runs up to 300 meters (1000 ft.). Heavier gauge cable and/or an amplifier is recommended for longer runs. The pin-out on all connectors is pin 1 = shield, pin 2 = cold (-), and pin 3 = hot (+). Pins 4 and 5 in the 5-pin XLR connectors are not used in the fixture but are available for possible additional data signals as required by the DMX512-A standard. Standard pin-out is pin 4 = data 2 cold (-) and pin 5 = data 2 hot (+).

To split the link into branches, use a splitter, such as the Martin 4-Channel Opto-Isolated RS-485 Splitter/Amplifier. Terminate the link by installing a termination plug in the output socket of the last fixture. The termination plug, which is a male XLR plug with a 120-Ohm, 0.25-Watt resistor soldered between pins 2 and 3, "soaks up" the control signal so it does not reflect and cause interference. If a splitter is used, terminate each branch of the link.

Connecting the data link

To connect the fixture to data:

1. Connect the DMX data output from the controller to the closest fixture's male XLR DMX input connector.

2. Connect the DMX output of the fixture closest to the controller to the DMX input of the next fixture and continue connecting fixtures output to input. Terminate the last fixture on the link with a 120-Ohm resistor.

Fixture setup

This section explains the fixture characteristics that can be set that determine how it can be controlled and will behave. These settings are made using the menus available from the control panel, and are retained, even when the fixture is powered off.

Using the control menus

A map of the control menu structure can be found in Control menus on page 27.

To access the control menus, press the MENU button. Navigate the menu structure using the ENTER, DOWN and UP buttons. Select any required menu option using the ENTER button. To return to a higher level in the menu structure without any change press the MENU button.

To exit the menu mode, hold and press the MENU button. (This will occur automatically after a period where there has been no user input.)

DMX addressing

The DMX address, also known as the start channel, is the first channel used to receive instructions from a DMX controller. The fixture can be controlled using signals sent by a DMX controller on twelve channels. Each DMX controlled fixture must have a DMX address set. For example, if a fixture has a DMX address of 10, then it uses channels 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 and 21. The following fixture in the DMX chain could then be set to a DMX address of 22.

For independent control, each fixture must be assigned its own control channels. Two fixtures of the same type may share the same address, if identical behavior is desired. Address sharing can be useful for diagnostic purposes and symmetric control, particularly when combined with the inverse pan and tilt options.

The DMX address is configured using the DMX ADDRESS menu in the control panel.

To set the fixture's DMX address:

1. Select DMX ADDRESS and press the ENTER button to confirm. The present address will blink on the display.

2. Use the UP and DOWN buttons to select the address (1 to 512).

3. Once the address has been selected, press the ENTER button to set it. To return to the higher level of the menu structure without any change press

the MENU button again.

Show mode

Show mode provides four preprogrammed shows. These can be accessed from certain DMX modes or the show will run if the fixture is not connected to DMX or blacked out in a standalone fashion. Show mode can be combined with sound activation.

To set a fixture's show mode:

1. Select SHOW MODE and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select Show 1, Show 2, Show 3 or Show 4.

3. Once the mode has been selected, press the ENTER button to set (or, to return to the higher level of the menu structure without any change press the MENU button).

Sound activation

The fixture has a built-in microphone that can be used to synchronize its behavior to the beat of music. When the fixture is not connected to a DMX controller, and is running in Show Mode, it can be set to trigger scene changes (effects, color changes and movement) in synch with music.

To turn on sound activation:

1. Select SOUND STATE and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select ON (sound activation on) or OFF (sound activation off).

3. Once the mode has been selected, press the ENTER button to set it (or, to return to the higher level of the menu structure without any change press the MENU button).

To adjust the sensitivity of the sound-activation microphone:

1. Select SOUND SENSE and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to change the sound sense from 0 …100.

3. Once the level has been selected, press the ENTER button to set it (or, to return to the higher level of the menu structure without any change press the MENU button).

Dimmer modes

For DMX control, there are four possible settings for controlling the rate of dimming:

MODE 1   LINEAR. The increase in light intensity appears to be linear as DMX value is increased.

MODE 2   SQUARE LAW – light intensity control is finer at low levels and coarser at high levels.

MODE 3   INVERSE SQUARE LAW – light intensity control is coarser at low levels and finer at high levels.

MODE 4   S-CURVE – light intensity control is finer at low levels and high levels and coarser at medium levels.

| Optically linear | Square law | Inverse square law | S-curve |
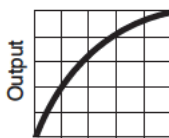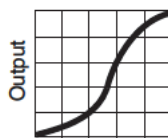
To set the fixture's dimmer curve:

1.   Select DIMMER CURVE and press the ENTER button to confirm. The present mode will blink on the display.

2.   Use the DOWN and UP buttons to select Mode1, Mode 2, Mode 3 or Mode 4.

3.   Once the mode has been selected, press the ENTER button to set it (or, to return to the higher level of the menu structure without any change press the MENU button).

Pan/tilt inversion

The PAN INVERSE and TILT INVERSE menus can be used to reverse the direction of pan and tilt. These settings are useful for symmetrical effects with multiple fixtures, or when coordinating the movement of fixtures that are floor mounted and rigged upside down.

To adjust the pan inversion settings:

1.   Select PAN INVERSE and press the ENTER button to confirm. The present mode will blink on the display.

2.   Use the DOWN and UP buttons to select the YES (tilt inversion) or NO (normal) mode.

3. Once the mode has been selected, press the ENTER button to confirm (or to return to the higher level of the menu structure without any change press the MENU button).

To adjust the tilt inversion settings:

1. Select TILT INVERSE and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select the YES (tilt inversion) or NO (normal) mode.

3. Once the mode has been selected, press the ENTER button to confirm (or, to return to the higher level of the menu structure without any change press the MENU button).

Backlight

To adjust the backlight settings:
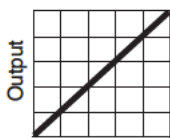
1. Select BACK LIGHT menu and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select the ON (LED on) or OFF (LED off) mode.

3. Once the mode has been selected, press the ENTER button to set it (or, to return to the higher level of the menu structure without any change press the MENU button).
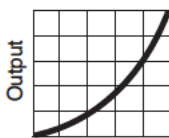
White balance adjustment

To adjust the white balance mix:

1. Select WHITE BALANCE and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select the RED or GREEN or BLUE.

3. Once the mode has been selected, press the ENTER button to setup.

4. Use the DOWN and UP buttons to change the value (125~255).

5. Once the correct value has been selected, press the ENTER button to set it (or, to return to a higher level of the menu structure without any change press the MENU button).

Function delay

Functions activated through DMX (when in DMX modes 9, 16, or 28) can be set so that they are delayed up to 3 seconds. To set a function delay duration:

1. Select Function Delay and press the ENTER button to confirm. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select the No Delay, 1S Delay, 2S Delay or 3S Delay.

3. Once the mode has been selected, press the ENTER button to set it (or, to return to the higher level of the menu structure without any change press the MENU button).

Blackout

You can blackout the fixture using the control menu:

1. Select BLACKOUT and press the ENTER button. The present mode will blink on the display.

2. Use the DOWN and UP buttons to select the YES (blackout) or NO (do not blackout) mode.

3. Once the mode has been selected, press the ENTER button to set it (or, to return to a higher level of the menu structure without any change press the MENU button).

Manual test

Fixture functions can be tested or controlled manually:

1. Select MANUAL TEST and press the ENTER button.

2. Use the DOWN and UP buttons to select PAN, TILT, RED1, GREEN1, BLUE1, WHITE1…RED4, GREEN4, BLUE4, WHITE4, DIMMER or STROBE.

3. Once the mode has been selected, press the ENTER button.

4. Use the DOWN and UP button to change the value (0-255).

5. To return to a higher level of the menu press the MENU button again.

Auto test

To perform a complete test of all of the fixture functions:

1. Select AUTO TEST and press the ENTER button.

2. Press the ENTER button. The fixture will run a self-test routine.

Temperature

To check the onboard temperature of the fixture:

1. Select TEMP and press the ENTER button. The display will show the temperature of the unit.

2. To return to a higher level of the menu press the MENU button again. Hold and press the MENU button to exit the menu mode.

Fixture time

To display the fixture's operating hours counter:

1. Select FIXTURE TIME and press the ENTER button. The display will show the number of working hours of the unit.

2. To return to a higher level of the menu press the MENU button again. Hold and press the MENU button to exit the menu mode.

Firmware version

To display the fixture's installed firmware version number:

1. Select FIRMWARE VERSION and press the ENTER button. The display will show the version of software of the unit.

2. To return to a higher level of the menu press the MENU button again. Hold and press the MENU button to exit the menu mode.

PRO defaults

To select or de-select PRO defaults:

1. Select PRO DEFAULTS and press the ENTER button. The display will blink.

2. Use the DOWN and UP buttons to select the YES (set the fixture to PRO Defaults settings) or NO.

3. Press the ENTER button to set (or, to return to the higher level of the menu structure without any change press the MENU button).

Head home position adjustment

The fixture head can lose its home position in some cases. To reset this:

1. In the menu structure, hold the ENTER button down for at least 3 seconds to enter Offset mode.

2. Use the DOWN and UP buttons up to choose PAN OFFSET or TILT OFFSET. Press the ENTER button and the display will blink.

3. Use the DOWN and UP buttons to adjust the home position of the head on the pan or tilt axis.

4. Once the correct position has been reached, press the ENTER button to set this (or, to return to a higher level of the menu structure without any change press the MENU button).

Reset factory default settings

The fixture's default settings can be restored using the RESET menu.

Effects

This section describes DMX-controllable effects that require particular explanation. See DMX protocol on page 24 for a full list of the DMX channels and values required to control the different effects.

Pan and tilt

The fixture's moving head can be panned through 540° and tilted through 270°. Using the control menus it is possible to invert pan or tilt movement and enable or disable blackout during movement of the fixture head.

Strobe effects

The strobe effects provide instant open and blackout, variable speed regular and random strobe.

Electronic dimming

Overall intensity can be adjusted 0-100% using electronic dimming. The dimmer curve can be adjusted using the fixture control panel (see Dimmer modes on page 17).

Color control

Full RGBW color mixing is available. The white balance can be adjusted using the fixture control menu (see White balance adjustment on page 18).

There is also an electronic color wheel effect that you can control as if it was a mechanical color wheel. You can select from 33 Lee-referenced colors and also snap through the colors as if you were rotating a color wheel.

Maintenance

Read Safety information on page 5 before maintaining the fixture. Always comply with the safety instructions.

Refer any service operation not described in this user manual to a qualified service technician.

Excessive dust, smoke fluid, and particle buildup degrades performance, causes overheating and will damage the fixture. Damage caused by inadequate cleaning or maintenance is not covered by the product warranty.

Always disconnect mains power before cleaning or servicing the fixture.

Fixtures must be serviced in an area where there is no risk of anyone being injured by failing parts, tools or other materials.

Cleaning

The cleaning of external optical lenses must be carried out periodically to optimize light output. Cleaning schedules for lighting fixtures vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the fixture. Environmental factors that may result in a need for frequent cleaning include:

- Use of smoke or fog machines.

- High airflow rates (near air conditioning vents, for example).

- Presence of cigarette smoke.

- Airborne dust (from stage effects, building structures and fittings or the natural environment at outdoor events, for example).

If one or more of these factors is present, inspect fixtures within their first 100 hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation. If in doubt, consult your RUSH by Martin dealer about a suitable maintenance schedule.

Use gentle pressure only when cleaning, and work in a clean, well-lit area. Do not use any product that contains solvents or abrasives, as these can cause surface damage.

To clean the fixture:

1. Disconnect the fixture from power and allow it to cool for at least 10 minutes.

2. Vacuum or gently blow away dust and loose particles from the outside of the fixture and the air vents at the back and sides of the head and in the base with low-pressure compressed air.

3. Clean the LED lenses by wiping gently with a soft, clean lint-free cloth moistened with a weak detergent solution. Do not rub the surface hard: lift particles off with a soft repeated press. Dry with a soft, clean, lint-free cloth or low-pressure compressed air. Remove stuck particles with an unscented tissue or cotton swab moistened with glass cleaner or distilled water.

4. Check that the fixture is dry before reapplying power.

Service and repairs

There are no user serviceable parts inside the fixture. Do not open the housing.

Never try to repair the fixture by yourself as this may result in damage or malfunction and it may potentially void your product warranty. The equipment must only be serviced or repaired by an authorized RUSH by Martin service technician.

Installation, on-site service and maintenance can be provided worldwide by the Martin Professional Global Service organization and its approved agents, giving owners access to Martin's expertise and product knowledge in a partnership that will ensure the highest level of performance throughout the product's lifetime. Please contact your RUSH by Martin supplier for details.

DMX protocol

Channel	Value	Function
1		**Electronic shutter effect**
	0 - 19	Shutter closed
	20 - 49	Shutter open
	50 - 64	Strobe 1 (fast to slow)
	65 - 69	Shutter open
	70 - 84	Strobe 2: opening pulse (fast to slow)
	85 - 89	Shutter open
	90 - 104	Strobe 3: closing pulse (fast to slow)
	105 - 109	Shutter open
	110 - 124	Strobe 4: random strobe (fast to slow)
	125 - 129	Shutter open
	130 - 144	Strobe 5: random opening pulse (fast to slow)
	145 - 149	Shutter open
	150 - 164	Strobe 6: random closing pulse (fast to slow)
	165 - 169	Shutter open
	170 - 184	Strobe 7: burst pulse (fast to slow)
	185 - 189	Shutter open
	190 - 204	Strobe 8: random burst pulse (fast to slow)
	205 - 209	Shutter open
	210 - 224	Strobe 9: sine wave (fast to slow)
	225 - 229	Shutter open
	230 - 244	Strobe 10: burst (fast to slow)
	245 - 255	Shutter open
2	0-255	Dimmer 0-100%
3	0-255	Pan 0°-540°
4	0-255	Pan fine
5	0-255	Tilt 0°-270°
6	0-255	Tilt fine
7		**Fixture control settings**
	0-9	*No function*
	10-14	Reset entire fixture
	15-94	*No function*
	95-99	Enable blackout during P/T movement
	100-104	*No function*
	105-109	Disable blackout during P/T movement
	110-114	Fast dimming, unrestricted effects speed
	115-119	*No function*
	120-124	Smooth dimming, slightly reduced effects speed
	125-249	Illuminate display

Channel	Value	Function
7 (contd.)	250-255	Stand-alone
8		**Color wheel effect**
	0 - 9	Open
	10 - 14	LEE 790 - Moroccan pink
	15 - 19	LEE 157 - Pink
	20 - 24	LEE 332 - Special rose pink
	25 - 29	LEE 328 - Follies pink
	30 - 34	LEE 345 - Fuchsia pink
	35 - 39	LEE 194 - Surprise pink
	40 - 44	LEE 181 - Congo Blue
	45 - 49	LEE 071 - Tokyo Blue
	50 - 54	LEE 120 - Deep Blue
	55 - 59	LEE 079 - Just Blue
	60 - 64	LEE 132 - Medium Blue
	65 - 69	LEE 200 - Double CT Blue
	70 - 74	LEE 161 - Slate Blue
	75 - 79	LEE 201 - Full CT Blue
	80 - 84	LEE 202 - Half CT Blue
	85 - 89	LEE 117 - Steel Blue
	90 - 94	LEE 353 - Lighter Blue
	95 - 99	LEE 118 - Light Blue
	100 - 104	LEE 116 - Medium Blue Green
	105 - 109	LEE 124 - Dark Green
	110 - 114	LEE 139 - Primary Green
	115 - 119	LEE 089 - Moss Green
	120 - 124	LEE 122 - Fern Green
	125 - 129	LEE 738 - JAS Green
	130 - 134	LEE 088 - Lime Green
	135 - 139	LEE 100 - Spring Yellow
	140 - 144	LEE 104 - Deep Amber
	145 - 149	LEE 179 - Chrome Orange
	150 - 154	LEE 105 - Orange
	155 - 159	LEE 021 - Gold Amber
	160 - 164	LEE 778 - Millennium Gold
	165 - 169	LEE 135 - Deep Golden Amber
	170 - 174	LEE 164 - Flame Red
	175 - 179	Open

8 (contd.)		**Color wheel rotation effect**
	180 - 201	Clockwise, fast to slow
	202 - 207	Stop (this will stop wherever the color is at the time)
	208 - 229	Counter-clockwise, slow to fast
	230 - 234	Open
		Random color
	235 - 239	Fast
	240 - 244	Medium
	245 - 249	Slow
	250 - 255	Open
9	0-255	Red 0-100%
10	0-255	Green 0-100%
11	0-255	Blue 0-100%
12	0-255	White 0-100%

Control menus

To access the control menus, press the MENU button until the required one is shown on the display. Select the required menu using the ENTER button. For more information, see Using the control menus on page 15.

Menu	Sub-menu	Explanation
DMX Address	1–501	Fixture DMX address setting
Show Mode	Show 1…Show 4	Show mode 1 to 4
Dimmer Curve	Mode 1…Mode 4	Dimmer curve
Blackout	Yes	Blackout
	No	Not blacked-out
Sound State	On	Sound activated mode.
	Off	Not sound activated
Sound Sense	0…100	Microphone sensitivity for sound activation
Pan Inverse	Yes	Invert pan control
	No	Normal pan control
Tilt Inverse	Yes	Invert tilt control
	No	Normal tilt control
Back light	On	Control panel display backlight on
	Off	Display backlight off
Function Delay	No Delay	
	1s Delay	
	2s Delay	
	3s Delay	
White Balance	Red (125…255)	Adjust white balance red mix
	Green (125…255)	Adjust white balance green mix
	Blue (125…255)	Adjust white balance blue mix
Manual Test	Pan (0…255)	Manual pan
	Tilt (0…255)	Manual tilt
	Red 1-4 (0…255)	Manual red, LEDs 1-4
	Green 1-4 (0…255)	Manual green, LEDs 1-4
	Blue 1-4 (0…255)	Manual blue, LEDs 1-4
	White 1-4 (0…255)	Manual white LEDs 1-4
	Dimmer (0…255)	

Menu	Sub-menu	Explanation
	Strobe (0…255)	
Auto test		Automatic test of all functions
Temp.		Temperature of onboard sensor
Fixture Time		Fixture operating hour counter
Firmware Version		Current installed firmware version
PRO Defaults	Yes	
	No	
Reset		Reset fixture to factory defaults

To access the Offset menu, press the MENU button to enter the menu structure and then press and hold the ENTER button for three seconds.

Menu	Sub-menu	Explanation
Offset	Pan offset	127...-127
	Tilt offset	127…-127

Troubleshooting

This section describes a few common problems that may occur during operation and provides some suggestions for easy troubleshooting:

Symptom	Potential cause	Remedies
No light from fixture, or fans not working.	Power supply issue, such as blown fuse, faulty connector or damaged cable.	Ensure that the mains supply is connected and supplying power to the fixture. Ensure that the fixture's power-on LED is lit. Check all power connections and cables. Replace the fixture fuse.
Sound activation does not work.	The fixture does not react to the beat of music.	Ensure that the fixture is not connected to a DMX signal Tap the microphone to ensure that it is functioning. The fixture should react when in sound activation mode.
One of the control channels is unresponsive or only responds intermittently.	Damaged step motor or cable connection between the head and body.	Contact your RUSH by Martin authorized distributor or service center for assistance.

Symptom	Potential cause	Remedies
Fixture does not respond to DMX control.	Fault in the DMX network due to connector or cable damaged, or incorrect DMX addressing, or potential interference from proximity to a high voltage installation.	Check that the fixture DMX LED is on, and if not, check all DMX cables and connections to ensure the integrity of the physical network. Ensure that the DMX network is terminated. Check that the components in the DMX network all use standard DMX polarity. Ensure that the fixture is set to the correct DMX address, one that matches that set on the DMX control device. Check the pins on the connectors from the previous fixture in the DMX network. Attempt to control the fixture with another DMX control device. Move the fixture if it is being operated very close to an unshielded high-voltage installation.

Specifications

Physical

Weight.. 5.7 kg (13 lbs.)
Dimensions .... 304 x 257 x 156 mm (12 x 10.1 x 6.1 in.)
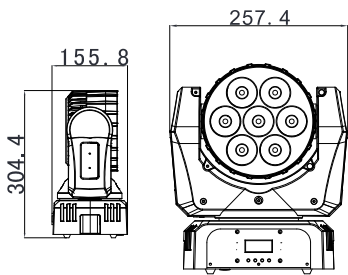
Dynamic Effects

Electronic color wheel effect .... 33 colors plus white, rotation effect
Color mixing .... Red, green, blue & white, with white balance control
Strobe effects...Random, regular, variable speed
Sound activation ....Adjustable microphone sensitivity
Built-in shows..4 pre-programmed show modes
Dimming...Electronic 0-100%, four dimmer curves
Pan...540°
Tilt ....270°
Pan/tilt options .... Invert

Optics and Photometric Data

Light source .... 7 x 10 W LEDs
Beam angle..10°

Control and Programming

Control options................DMX, stand-alone (music trig, auto trig/show mode)
DMX channels... 12
DMX control protocol ....USITT DMX512/1990
Interface...Control panel with backlit display

Construction

Color .... Black

IP rating...IP 20

Installation

Location...For indoor use only

Connections

AC power input ....Neutrik PowerCon
AC power throughput...Neutrik PowerCon
DMX data in/out .... 3-pin & 5-pin locking XLR

Electrical

AC power .... AC 100V~240V, 50/60Hz
Power consumption ....132 W
Fuse T6.3A
Power supply unit...................................Auto-ranging electronic switch mode
Supplied power cable..1.5 m (5 ft)

Typical power and current

110 V, 60 Hz .... 135 W, 1.0 A
230 V, 50 Hz .... 130 W, 1.7 A

Thermal

Cooling..Forced air
Maximum ambient temperature (T_a max.) .... 40° C (104° F)
Minimum ambient temperature (T_a min) ....0°C (32° F)

*Specifications are subject to change without notice. For the latest product
specifications, see* www.martin.com

	Disposing of this product
	RUSH by Martin™ products are supplied in compliance with Directive 2002/96/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), as amended by Directive 2003/108/EC, where applicable. Help preserve the environment! Ensure that this product is recycled at the end of its life. Your supplier can give details of local arrangements for the disposal of RUSH by Martin products

RUSH™

by Martin®

Innovation • Quality • Performance